

CLAIMS

1. Method for the detection and identification of an object provided with identification means and wireless transmission means, this object being present close to one receiver module among a plurality of receiver modules, this method comprising:
- an electromagnetic coupling between the wireless transmission means of said object and a fixed antenna associated with said receiver module, and
 - an electrical coupling between said fixed antenna of the receiver module and a secondary fixed antenna common to all of said fixed antennae of the receiver module, this common secondary fixed antenna being electromagnetically coupled to a primary fixed antenna connected to a reader module which is designed to read identification data originating from said identification means.
2. Method according to claim 1, characterized in that it also comprises a transmission of information from the reader module to the identification means of a previously detected and identified object.
3. Method according to claim 2, characterized in that it also comprises writing of information transmitted from the reader module into information storage means within a previously detected and identified object.
4. Method according to one of the previous claims, characterized in that the secondary fixed antenna is electrically coupled to each of the fixed antenna of each receiver module in succession.
5. Method according to one of the previous claims, characterized in that each electromagnetic coupling between a fixed antenna of a receiver module and

wireless transmission means of an object induces a supply to the identification means within said object, by inductive coupling, of electrical energy originating from a power supply module connected to the primary fixed antenna.

6. Method according to claim 5, characterized in that each electromagnetic coupling between a fixed antenna of a receiver module and wireless transmission means of an object induces a transmission of identification data transmitted by the identification means of said object towards the reader module.

7. Method according to one of the previous claims, characterized in that it also comprises a processing of the identification data originating from the identification means of an object, and a selective control of blocking/locking means which are associated with the receiver module the antenna of which is electromagnetically coupled to the wireless transmission means of said object.

8. Method according to one of the previous claims, comprising:

- an electromagnetic coupling between the wireless transmission means of said object and a fixed reception antenna associated with a receiver module,
- a permanent electromagnetic coupling between a secondary fixed reading antenna and an antenna of a reader module,

characterized in that the secondary fixed reading antenna is connected to the fixed reception antenna via a plurality of link sections in cascade each comprising an electrical link between a secondary intermediate antenna of said link section and a primary intermediate antenna of said link section and an electromagnetic coupling between said primary intermediate antenna

and a secondary intermediate antenna of a following link section.

- 5 9. Device for the detection and identification of an object provided with identification means and wireless transmission means, this object being present close to one receiver module among a plurality of receiver modules, this device comprising:
- 10 - a plurality of fixed antennae each associated with one receiver module among the plurality of receiver modules,
- means for selectively connecting one antenna of said plurality of fixed antennae to a common secondary fixed
- 15 antenna,
- a primary fixed antenna electromagnetically coupled to the secondary fixed antenna, and
- a common reader module designed to read identification data originating from said identification
- 20 means, this reader module being connected to the primary fixed antenna.

10. Device according to claim 9, characterized in that the common reader module is also designed to transmit

25 information to an object close to a receiver module.

11. Device according to one of claims 9 or 10, characterized in that the selective connection means are arranged in order to connect each fixed antenna of the

30 module to the secondary fixed antenna in sequence.

12. Device according to one of claims 9 to 11, characterized in that it also comprises a power supply module connected to the primary fixed antenna, this

35 module being arranged in order to transmit electrical energy to the identification means of an object the wireless transmission means of which are inductively coupled to a fixed antenna of a receiver module, via

the electromagnetic coupling between the primary fixed antenna and the secondary antenna and the electromagnetic coupling between the fixed antenna of the receiver module
 5 and the wireless transmission means of said object.

13. Device according to one of claims 10 to 12, characterized in that the common secondary antenna is electromagnetically coupled to a primary intermediate
 10 antenna, this primary intermediate antenna being electrically connected to a secondary intermediate antenna electromagnetically coupled to the primary fixed antenna electrically connected to the reader module.

14. Device according to claim 13, characterized in that it also comprises a plurality of pairs of intermediate antennae each constituted by a primary intermediate antenna and a secondary intermediate antenna which are electrically connected.

15. Equipment for securely storing a plurality of objects each provided with identification means and wireless transmission means, comprising:

- a group of modules each designed to receive one
 25 object among said plurality of objects, each receiver module comprising means for selectively blocking/locking an object, and
- means for controlling said selective blocking/locking means,

30 characterized in that it also comprises a plurality of fixed antennae each associated with one receiver module among the plurality of receiver modules,

- means for selectively connecting one antenna among said plurality of fixed antennae to a common secondary
 35 fixed antenna, and

- a primary fixed antenna electromagnetically coupled to the secondary fixed antenna, and

- a common reader module designed to read identification data originating from said identification means, this reader module being connected to the primary fixed antenna and cooperating with the control means.

16. Equipment according to claim 15, characterized in that it also comprises electrical supplying means connected to the primary fixed antenna, which are arranged in order to supply power to the identification means of an object the wireless transmission means of which are inductively coupled to one antenna of one of the receiver modules of said equipment.

17. Equipment according to one of claims 15 or 16, designed for the management of a set of keys, characterized in that each receiver module comprises:

- a housing arranged to receive a mechanical coupling part of a key or a key ring, this part including the wireless transmission means,
- a fixed antenna of the module arranged close to said housing so as to produce an electromagnetic coupling between said fixed antenna and the wireless transmission means of an object the mechanical coupling part of which is engaged in the receiver housing, and
- an electromagnet comprising a mobile part arranged in order to engage in said mechanical coupling part.

18. Equipment according to claim 17, characterized in that the mechanical coupling part has one end which comprises in an substantially cylindrical cavity, the wireless transmission means and the identification means of the object.

19. Equipment according to one of claims 17 or 18, characterized in that the mechanical coupling part comprises:

5 - a first part comprising:

- a head which includes the wireless transmission means and the identification means,

- an indented part for receiving the mobile part of a blocking/locking electromagnet,

10 - a non-reversible mechanical coupling part, and

- a second part comprising at least one housing for receiving the non-reversible mechanical coupling part of the first part.

15 20. Equipment according to one of claims 15 or 16, designed to store in a secure manner weapons provided with identification means and wireless transmission means.

20 21. Object designed to be processed by a detection and identification method according to one of claims 1 to 8, comprising identification means and wireless transmission means designed to exchange information by proximity radiofrequency with a receiver module.

25 22. Object according to claim 21, characterized in that it also comprises means for mechanical coupling with selective blocking/locking means arranged in said receiver module.

30 23. Application of the method according to one of claims 1 to 8, for the management of keys or bunches of keys in a lockable cabinet.

35 24. Application of the method according to one of claims 1 to 8, for the management of documents in a filing cabinet.

25. Application of the method according to one of claims 1 to 8, for the management of weapons in a weapons locker.

5 26. Application of the method according to one of claims 1 to 8, for the identification of a vehicle in a parking space.

10 27. System for the detection and identification of a vehicle in a parking space of a parking area, using the method according to one of claims 1 to 8, characterized in that this parking space comprises a fixed reception antenna electrically connected to a primary antenna common to all of the parking spaces of said parking area
15 and electromagnetically coupled to an antenna of a common reader module, said vehicle being equipped with an identifier module comprising an antenna arranged within said vehicle in order to be electromagnetically coupled to the fixed reception antenna of said parking space when
20 said vehicle is parked in said parking space.

28. System according to claim 26, characterized in that the identifier module of the vehicle is included in one and/or more of the number plates of said vehicle.

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29. System according to claim 27, characterized in that the identifier module of the vehicle is provided in the form of a radiofrequency tag (RF tag).